TELEDYNE COUGAR
A Teledyne Technologies Company

AC2034 10 TO 2000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	***AC2034***
High Gain	***18.0 dB***
Low Noise Figure	***4.0 dB***
Low SWR	***< 1.5:1***
Medium Output Level	***+7.0 dBm***

High Performance Thin Film
Standard Size TO-8

SPECIFICATIONS*

Parameter	Typical	Guaranteed 0 to 50° C	Guaranteed -55 to +85° C
Frequency (Min.)	**8-2100 MHz**	**10-2000 MHz**	**10-2000 MHz**
Small Signal Gain (Min.)	18.0 dB	17.0 dB	16.0 dB
Gain Flatness (Max.)	±0.3 dB	±0.7 dB	±1.0 dB
Noise Figure (Max.)	4.0 dB	4.8 dB	5.3 dB
SWR (Max.) Input/Output	< 1.5:1	1.8:1	2.0:1
Power Output (Min.) @ 1dB comp.	+7.0 dBm	+6.5 dBm	+6.0 dBm
DC Current (Max.)	34.0 mA	37.0 mA	40.0 mA

* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.

INTERMODULATION PERFORMANCE

(Typical @ 25° C)	***AC2034***
Second Order Harmonic Intercept Point	+47 dBm
Second Order Two Tone Intercept Point	+41 dBm
Third Order Two Tone Intercept Point	+20 dBm

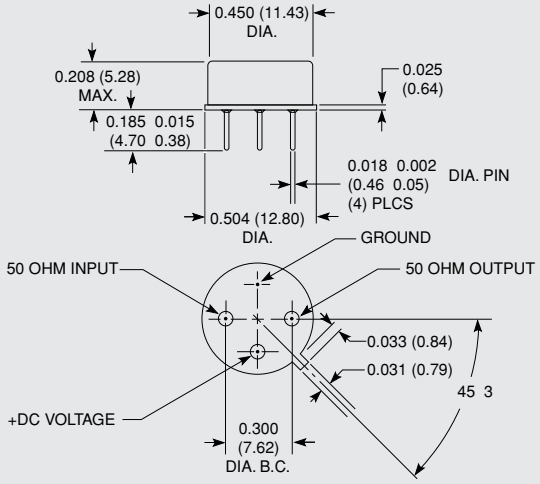
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125° C
Maximum Case Temperature	+125° C
Maximum DC Voltage	+18 Volts
Maximum Continuous RF Input Power	+10 dBm
Maximum Short Term Input Power (1 Minute Max.)	50 Milliwatts
Maximum Peak Power (3 µsec Max.)	0.5 Watt
Burn-in Temperature	+125° C
Thermal Resistance[1] (θjc)	+43° C/Watt
Junction Temperature Rise Above Case (Tjc)	+23.8 C

[1]Thermal resistance is based on total power dissipation.

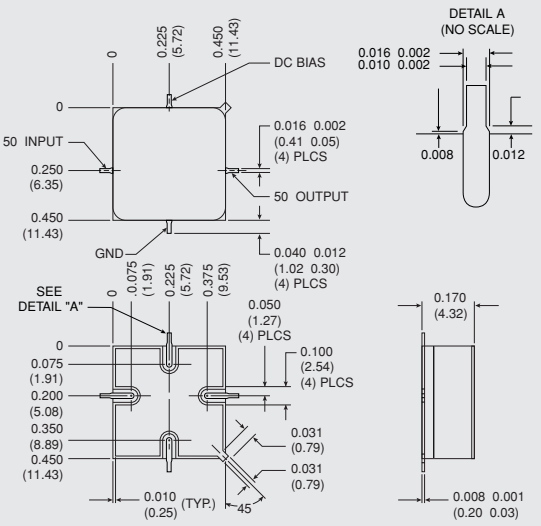
AC2034

TO-8 Package for Amplifiers



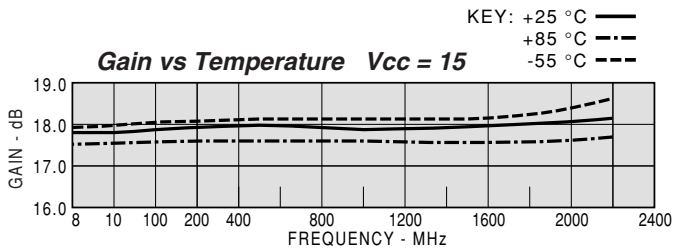
AS2034

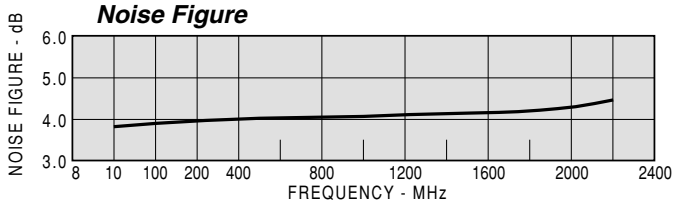
SMTO-8 Package for Amplifiers

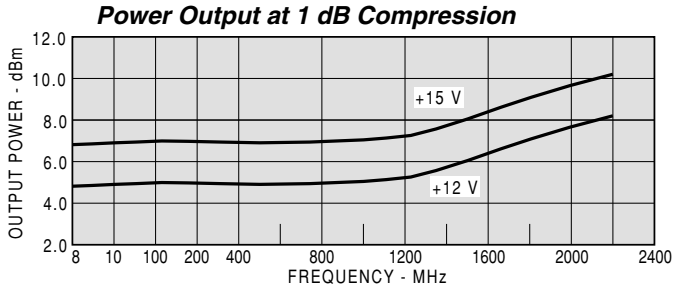


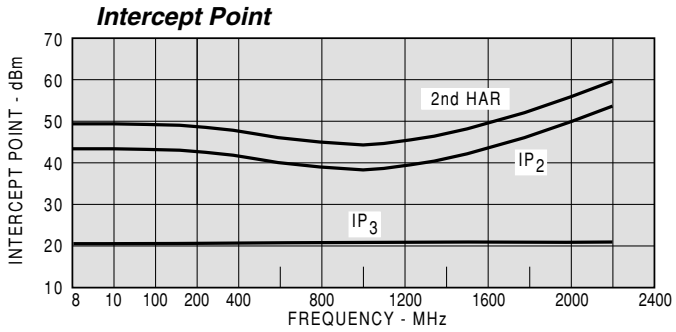
DIMENSIONS ARE IN INCHES (MILLIMETERS)

TYPICAL PERFORMANCE









TYPICAL AUTOMATIC TEST DATA

MODEL: AC2034 Vcc = +15V Icc = 34.05 mA

FREQ MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
5	1.30	1.34	17.8		-31.0
10	1.20	1.21	18.1		-30.7
100	1.13	1.15	18.2	0.816	-30.4
300	1.13	1.17	18.2	0.473	-30.6
500	1.17	1.20	18.2	0.477	-30.7
700	1.18	1.24	18.2	0.454	-31.0
900	1.26	1.24	18.3	0.470	-31.6
1100	1.29	1.22	18.3	0.473	-32.0
1300	1.30	1.12	18.3	0.471	-32.4
1500	1.31	1.04	18.2	0.468	-33.3
1700	1.30	1.12	18.2	0.479	-33.4
1900	1.50	1.24	18.1	0.451	-34.2
2000	1.60	1.30	18.2	0.461	-34.2
2100	1.75	1.30	18.4	0.474	-34.8
2200	2.03	1.49	18.9	0.546	-34.3

LINEAR S-PARAMETERS

MODEL: AC2034 Vcc = +15V Icc = 34.05 mA

FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.16	-109.0	7.77	24.9	0.028	36	0.14	-114.8
10	0.09	-131.1	8.01	11.0	0.029	18	0.09	-135.1
100	0.06	172.7	8.09	-15.4	0.030	-5	0.07	-176.0
300	0.06	151.0	8.12	-49.5	0.029	-14	0.08	174.2
500	0.08	140.1	8.16	—83.5	0.029	-27	0.09	158.4
700	0.08	116.8	8.11	-116.3	0.028	-35	0.11	139.9
900	0.11	98.1	8.21	-150.1	0.026	-46	0.11	120.9
1100	0.13	95.2	8.23	175.7	0.025	-58	0.10	97.7
1300	0.13	89.4	8.21	141.8	0.024	-66	0.06	68.0
1500	0.13	90.8	8.15	108.1	0.022	-77	0.02	-20.5
1700	0.16	97.5	8.16	73.7	0.021	-91	0.06	-112.5
1900	0.20	85.7	8.02	41.1	0.020	-102	0.11	-168.8
2000	0.23	83.4	8.12	24.6	0.020	-105	0.13	-167.3
2100	0.27	75.3	8.36	7.7	0.018	-109	0.16	-174.0
2200	0.34	63.5	8.81	-12.2	0.019	-118	0.20	175.4
2300	0.40	51.3	9.41	-33.1	0.019	-114	0.24	163.9
2400	0.49	35.8	9.41	-57.3	0.021	-117	0.27	149.0

MODEL: AC2034 Vcc = +12V Icc = 27.37 mA

FREQ MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
5	1.35	1.34	17.3		-30.7
10	1.18	1.21	17.6		-30.3
100	1.09	1.15	17.7	0.814	-30.3
300	1.10	1.17	17.7	0.478	-30.1
500	1.14	1.20	17.8	0.475	-30.4
700	1.14	1.23	17.7	0.459	-30.9
900	1.19	1.23	17.8	0.476	-31.4
1100	1.26	1.20	17.8	0.480	-31.9
1300	1.33	1.11	17.8	0.474	-32.4
1500	1.35	1.00	17.7	0.473	-33.2
1700	1.48	1.11	17.7	0.481	-33.0
1900	1.62	1.24	17.6	0.460	-33.8
2000	1.77	1.29	17.6	0.465	-33.6
2100	1.95	1.36	17.9	0.465	-33.9
2200	2.21	1.45	18.3	0.557	-33.7

LINEAR S-PARAMETERS

MODEL: AC2034 Vcc = +12V Icc = 27.37 mA

FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.15	-103.1	7.31	24.3	0.15	35	0.15	-113.6
10	0.08	-123.5	7.57	10.8	0.10	17	0.10	-134.5
100	0.04	178.5	7.65	-15.5	0.07	-4	0.07	-176.7
300	0.05	157.1	7.69	-49.9	0.08	-15	0.08	172.4
500	0.06	144.1	7.73	-84.2	0.09	-27	0.09	158.4
700	0.07	126.2	7.70	-117.4	0.10	-37	0.10	140.5
900	0.09	107.5	7.78	-151.5	0.10	-47	0.10	121.7
1100	0.11	101.3	7.81	173.8	0.08	-58	0.08	100.2
1300	0.14	102.6	7.76	139.9	0.05	-68	0.05	78.5
1500	0.15	103.7	7.69	105.7	0.00	-79	0.00	65.9
1700	0.19	101.1	7.68	70.9	0.05	-94	0.05	-147.9
1900	0.24	86.9	7.56	38.0	0.11	-99	0.11	-173.1
2000	0.28	81.4	7.62	21.3	0.13	-104	0.13	179.4
2100	0.32	71.9	7.85	3.7	0.15	-110	0.15	175.1
2200	0.38	60.7	8.23	-16.4	0.18	-117	0.18	165.8
2300	0.44	48.1	8.69	-37.7	0.22	-112	0.22	154.2
2400	0.52	32.6	8.57	-62.0	0.25	-118	0.25	139.7